

New bottle design improves feeding performance for premature infants

Compared to standard bottle designs, the MAM Easy-Start™ Anti-Colic bottle helps to overcome the unique challenges of preterm infant feeding.



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Jenik, A., Fustinana, C., Marquez, M., Mage, D., Fernandez, G., & Mariani, G. (2012). **A New Bottle Design Decreases Hypoxemic Episodes during Feeding in Preterm Infants.** International journal of pediatrics, 2012.

Oxygen desaturation events, expressed as median and (interquartile range)

| | Standard bottle | New bottle design | P* |
|---|-----------------|-------------------|---------|
| Percentage of feeding time SpO ₂ <90% | 8% (3–13) | 5% (2–11) | <0.004 |
| Percentage of feeding time SpO ₂ 90%–94% | 13% (6–21) | 8% (2–18) | <0.0007 |
| Number of desaturation events per infant | 10 (1–19) | 4 (1–8) | <0.001 |
| Time with SpO ₂ <90% (s) | 46 s (8.3–150) | 30 s (6–96) | <0.001 |
| Mean SpO ₂ during feeding | 94 (91–96) | 96 (93–98) | <0.0008 |

*Wilcoxon signed-0 rank test.

Conclusion

Thanks to an innovative bottle system, oxygen saturation of premature babies during feeding is significantly improved compared to conventional bottles. The system also increases milk intake and reduces milk loss during drinking.

Methodology

The study was carried out with 34 premature babies, who were already entirely orally fed and were no longer receiving oxygen. The babies were fed twice a day. They were fed alternately with a conventional bottle and the new bottle system. For the study, the SpO₂ values of the babies were measured 5 minutes before the feed and throughout the entire period of feeding. Efficiency was assessed on the basis of milk intake and milk loss.

Background

Breast milk is clearly the best for the baby. However, there are several reasons why breastfeeding sometimes does not work. In such cases, bottle feeding with expressed breast milk could be the best alternative. In the case of ordinary bottle systems, a vacuum often forms in the bottle, which prevents an even drink flow. Babies need a well-developed sucking ability to drink from such a bottle. However, this is often absent from many premature infants. Moreover, bottle-fed babies have a lower oxygen saturation than breast-fed babies and a lower drinking efficiency. The study by Jenik et al. compares bottle systems in terms of efficiency and SpO₂ values when feeding premature infants.

Key Findings

- The design of the innovative base valve prevents the creation of a vacuum.
- Standard bottle leads to desaturation events more often compared to the innovative bottle system.
- An adequate oxygen supply allows babies to maintain their behavioural organisation.
- Improved feeding abilities lead to shorter hospital stays.
- Milk absorption and oxygen saturation are higher for the innovative bottle system than for the conventional bottle.

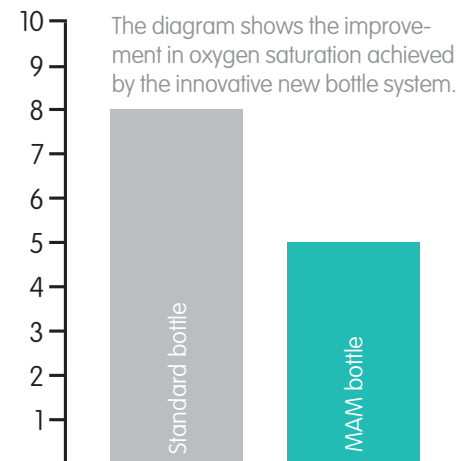


Fig.: 1
Percent of feeding time SpO₂ < 90%

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